1238973
(0076316H)

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
3100 Port of Benton Blvd • Richland, WA 99354 • (509) 372-7950
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

June 20, 2016

16-NWP-109

Mr. Kevin W. Smith, Manager
Office of River Protection
United States Department of Energy
PO Box 450, MSIN: H6-60
Richland, Washington 99352

Mr. Mark A. Lindholm, President
Washington River Protection Solutions, LLC
PO Box 850, MSIN: H3-21
Richland, Washington 99352

Re: Department of Ecology's (Ecology) Comments on the 2016 *Double-Shell Tank System Integrity Assessment Report (DSTAR)*, RPP-RPT-58441, Rev. 0, dated March 2, 2016

Dear Mr. Smith and Mr. Lindholm:

Periodic assessment of the integrity of the Double-Shell Tank (DST) system is required to maintain compliance with the requirements of 40 Code of Federal Regulations 265.191 and Washington Administrative Code 173-303-640(2). The purpose of the integrity assessment is to determine that the tank system is not leaking and is fit for use. The minimum requirements for integrity assessments are specified in the regulations as described in the 2016 *Double-Shell Tank System Integrity Assessment Report (DSTAR)*, RPP-RPT-58441, Revision 0.

The Washington State Department of Ecology (Ecology) has reviewed the 2016 DSTAR and determined it does not meet the requirements. Some examples of the deficiencies:

- Numerous DST system components are incorrectly excluded from the scope of the 2016 DSTAR. The DSTAR relies extensively on the concepts of "deferred use" and "emergency use only" as the rationale for excluding non-compliant tank system components. There is no regulatory basis for this, and Ecology will no longer recognize those terms. Non-compliant systems must be upgraded to current standards or subject to closure requirements.
- Components which are ancillary equipment are also not included in the integrity assessment. The regulatory definitions of tank systems and ancillary equipment should be reviewed.
- The previous integrity assessment was predicated on the basis that treatment of tank waste would be complete by 2028. The current DSTAR maintains that perception, while the mission has changed. The integrity assessment needs to acknowledge that the DST system must now operate to 2050 or beyond.
- No schedule is provided for conducting integrity assessments over the life of the tank system.
- Ecology is concerned the DSTs AP-102 and AW-103 may be unfit-for-use. Tank AP-102 lacks a creditable secondary containment according to the documentation provided, while AW-103 has no compliant means of accessing the tank. United States Department of Energy – Office of River Protection needs to demonstrate these tanks are fit-for-use.

- The 2016 DSTAR identifies several issues with the DST infrastructure. While much importance is being given to upgrades to provide feed to early startup of the LAW-Vitrification system, little appears to be done to ensure the continued availability of the DST system. An example is the questionable status of the single line available for returning slurry from the 242-A Evaporator to the DSTs, which has the potential of impacting the entire mission.

Enclosed are Ecology's comments on the 2016 DSTAR. The comments are significant and cause for concern. Long-term viability of the DST system is essential to completing the cleanup mission. A path forward must be developed for addressing these and other emerging issues. Ecology is available to assist in this as needed.

If you have questions, please contact me at jeff.lyon@ecy.wa.gov or (509) 372-7914.

Sincerely,

CLO Whalen
SOR

Jeff Lyon
Tank Systems Operation and Closure Project Manager
Nuclear Waste Program

sl/aa
Enclosure

cc electronic w/ enc:
Dave Bartus, EPA
Dennis Faulk, EPA
Thomas Fletcher, USDOE
Lori Huffman, USDOE
Jeremy Johnson, USDOE
Dan Baide, WRPS
Kayle Boomer, WRPS
Neil Davis, WRPS
Amie Feero, WRPS
Jason Gunter, WRPS
Jessica Joyner, WRPS
Dirk Dunning, ODOE
Ken Niles, ODOE
Kelly Wood, AGO
Suzanne Dahl, Ecology
Eddie Holbrook, Ecology
Steve Lowe, Ecology
Jeff Lyon, Ecology
John Price, Ecology
Ron Skinnarland, Ecology
Alex Smith, Ecology
Cheryl Whalen, Ecology
Kristi Wold, Ecology
USDOE-ORP Correspondence Control
WRPS Correspondence Control
Hanford Facility Operating Record
Environmental Portal

cc w/enc:
Steve Hudson, HAB
Administrative Record
NWP Compliance Index File: 14.489
NWP Central File

cc w/o enc:
Rod Skeen, CTUIR
Gabriel Bohnee, NPT
Russell Jim, YN
NWP Reader File

Review Comment Record	Washington State Department of Ecology Nuclear Waste Program Cleanup Section/ER Project	Date 6/20/16 Page 1 of 19

Document Title(s)/Number(s): *Double-Shell Tank System Integrity Assessment Report (DSTAR)* RPP-RPT-58441, Rev. 0

No.	Section / Page	2016 DSTAR Statement	Comment
1	2.1 / p 7	This is not a review of future program plans or an estimate of remaining useful life (ERUL).	A schedule for conducting integrity assessments over the life of the DST System was not included in the 2016 DSTAR. A schedule is required and must be based on the results of past integrity assessments, age of the tank system, materials of construction, characteristics of the waste, and other relevant factors. The previous 2006 DSTAR included an assessment of potential failure modes, and estimates of the remaining useful life of the DSTs and pipelines. But this was predicated on completing the Hanford cleanup mission by 2028, and clearly no longer applies. The 2016 DSTAR continues the same incorrect theme (e.g., Section 5.1.1 credits earlier ERUL calculations and states "…all DST System pipelines will reach the 2028 milestone with enough remaining wall thickness to support internal pressure.") A formal assessment of the ERUL was recommended in 2006 by the IQRPE, the WRPS disposition shows this as "Completed," when in fact it was not. Now treatment of tank wastes will not even begin until 2022 and HLW-Vit initial operation has been delayed to 2036. All the DSTs have exceeded their design lives, and many have documented instances of pitting and wall thinning. There is a lack of DST storage space, and some DSTs are being re-purposed for WTP feed characterization, staging, and waste returns. Their role has changed significantly from what was previously assessed. Earlier estimates of the remaining useful life are now a concern (e.g., AY-101 is 2032). Understanding of the factors affecting the integrity of the DSTs has greatly improved since the last assessment. An updated estimate of the remaining useful life of the DSTs and a schedule of integrity assessments is critical to the success of the Hanford cleanup mission. Delaying this to 2026 is not acceptable. [WAC 173-303-640(2)(e)]
	3.3.3 / p 15	2016 DSTAR R16-1: The next DSTAR should be in 2026 (a 10-year interval from this 2016 DSTAR). At that time, tank AY-101 will be 6 years from its currently analyzed life expectancy of 60 years. As systems age, it is appropriate that assessments, inspections, and observations become more frequent or at least no less frequent.	
	3.3.3 / p 16	2016 DSTAR R16-9: The life expectancy of the DST's should be reassessed by 2025. The life expectancy developed in the existing thermal and seismic study (RPP-RPT-28968, Hanford Double-Shell Tank Thermal and Seismic Project – Summary of Combined Thermal and Operating Loads with Seismic Analysis) was 60 years. In 2025, tank AY-101 will be 53 years old, which is 7 years from its current life expectancy. By completing the assessment by 2025, the information would be available for the 2026 DSTAR.	
	5.1.1 / p 48	ERUL results indicated that all DST System pipelines will reach the 2028 milestone with enough remaining wall thickness to support internal pressure.	
	5.6 / p 67	2006 DSTAR R47: A formal ERUL calculation should be performed to assess the structural impact of corrosion/erosion on the DST System pipelines.	
	Table H-1 / p H-11	2006 DSTAR R-19: The DSTs will be re-evaluated for structural integrity before the end of their service life in 2028.	

No.	Section / Page	2016 DSTAR Statement	Comment
	Table H-1 / p H-29	2006 DSTAR R-47: A formal Estimated Remaining Useful Life (ERUL) calculation should be performed to assess the structural impact of corrosion/erosion on the DST system pipelines...ERUL calculations seem to indicate that relatively few, if any, waste transfer lines would fail during the 2028 mission.	
2	9.3.3 / p 108 9.6.2 / p 113 9.6.3 / p 114 Table B-2 / p B-4	...future waste additions would be typical of the types of waste currently stored in the tanks. This includes the vast majority of waste to be received, which is retrieved waste from the SSTs. Future waste additions will likely be of similar properties and present no concerns assuming continued management per HNF-SD-WM-OCD-015. For waste characterization, the next overall DSTAR integrity assessment should follow the current 10-year schedule. The characteristics of the tank waste, as currently managed, are not a driver of the schedule for conducting the next integrity assessment.	The integrity assessment is required to address current wastes and wastes that will be handled. The 2016 DSTAR does not address known issues associated with future waste additions to the DSTs. Little mention is made of waste returning to the DSTs from LAWPS, LAW-Vit, and EMF starting in 2022. Design and construction of the new facilities is underway. The chemistry of these future waste streams will require adjustment to the corrosion control specifications for the DSTs and 242-A Evaporator. Solids settling and erosion has presented design issues for WTP systems, but has yet to be considered for how it may impact the DSTs. Deferring the assessment of waste compatibility to the next DSTAR means not until 2026, after the startup of WTP which is too late. A recommendation to assess the compatibility of these new waste streams in the next 3 years is needed. It is not enough to simply assume existing processes will make things okay. [40 CFR 265.191(b)(2)] [WAC 173-303-640(2)(c)(ii)]
3	Table 7-1 / p 89	AW-01A 9/2013 to 9/2015 AW-06A 12/2013 to 12/2015 AW-04A 8/2013 to 8/2015 AW-03A 5/2013 to 5/2015 AN-05A 8/2013 to 8/2015 AN-02A 8/2013 to 8/2015 AN-03A 8/2013 to 8/2015 AN-07A 8/2013 to 8/2015	Many of the pits listed in Table 7-1 are beyond the due date to be inspected. Yet these same pits are listed in Table D-1 as being **Fit For Use**. The 2006 DSTAR included a recommended inspection frequency for each of the pits. The 2016 DSTAR reiterates the recommendation, but then goes on to say it is okay to just inspect the pits prior to use for those that are late rather than prioritizing them. That defeats the purpose of any schedule (a regulatory requirement), ignores the recommendation of the previous IQRPE, and provides no basis for stating these pits are Fit For Use. [WAC 173-303-640(2)(e)]

No.	Section / Page	2016 DSTAR Statement	Comment
	Table H-1 / p H-38 3.3.2 / p 16 3.3.2 / p 17 7.6.3 / p 93	2006 DSTAR R61: Pits must be cleaned and have their coatings re-inspected by a qualified NACE coating inspector at the following periodicities… 2016 DSTAR R16-5: Inspection cycles of the pit coatings and lining materials should be completed every... 2016 DSTAR R16-7: In instances where the recommended inspection cycles have not been met for pits that are not being used, the pit coatings should be inspected prior to use.	
4	2.1 / p 7 2.3 / p 9	The DST System includes 27 DSTs, 77 pipelines, 38 pits, and other ancillary systems. The following tanks and ancillary equipment are excluded from this 2016 DSTAR: • (Numerous items listed)	The regulations specify the types of tank system components which must be evaluated in the integrity assessment. Many types of components were incorrectly excluded. The tanks, secondary containment, and ancillary equipment all must be evaluated. See the regulatory citations below. There is no logic to include items like the RCSTS line SNL-3150 but not mention the associated 6241-A Diversion Box or the 6241-V Vent Station, both of which were included in the previous 2006 DSTAR and determined to be FFU. Other components such as the lines SN-637, SN-700, and SN-701 for delivering feed to WTP, or the radioactive/dangerous liquid effluent lines from WTP to LERF/ETF and that tie into the 242-A Evaporator PC-5000 line were also omitted. <u>Applicable Regulations</u> 40 CFR 265.191 Assessment of existing tank system's integrity. (a) For each existing **tank system** that does not have secondary containment meeting the requirements of § 265.193, the owner or operator must determine that the tank system is not leaking or is unfit for use. 40 CFR 260.10 Definitions. **Tank system** means a hazardous waste storage or treatment tank and its associated **ancillary equipment** and **containment system**. **Ancillary equipment** means any device including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps, that is used to distribute, meter, or control the flow of hazardous waste from its point of

No.	Section / Page	2016 DSTAR Statement	Comment
			generation to a storage or treatment tank(s), between hazardous waste storage and treatment tanks to a point of disposal onsite, or to a point of shipment for disposal off-site. [40 CFR 260.10, 40 CFR 265.191] [WAC 173-303-640(2)(a), WAC 173-303-040]
5	2.3 / p 9	The following tanks and ancillary equipment are excluded from this 2016 DSTAR: • (Numerous items listed)	The 6241-A Diversion Box and the 6241-V Vent Station support operation of the Replacement Cross-Site Transfer System (RCSTS). Planning for operation of the DFLAW and LAW-Vit systems requires extensive use of the RCSTS for transferring waste from 200W to 200E **starting in 2025**. The entire RCSTS system must be evaluated in the 2016 DSTAR. Deferring to the next DSTAR in 2026 is not acceptable.
6	2.3 / p 9 Table H-1 / p H-18	The following tanks and ancillary equipment are excluded from this 2016 DSTAR: • Air handling systems used to ventilate the DSTs and ancillary structures, such as tank AZ-301. 2006 DSTAR Recommendation R29: Attachment 2 of Volume 4 contains a letter report from a NACE certified Cathodic Protection Specialist who evaluated the need for cathodic protection and corrosion protection measures on the secondary liner of catch tank AZ-301…It is therefore recommended to invoke a visual inspection program for the internal side of the secondary liner. Visual inspections on the internal side of the secondary liner should be performed every ten years from the time the tank was installed. The first inspection will be due to be performed in 2015. (WRPS Disposition) The visual inspection will occur in FY 2014. The action to complete the inspection will be incorporated in the next revision of RPP-7574, *Double-Shell Tank Integrity Program Plan.*	The AZ-301 Condensate Collection Tank is a RCRA-compliant installation that manages dangerous waste and replaced 241-AZ-702, which itself was FFU in the 2006 DSTAR. The 2006 DSTAR included a recommendation by a corrosion specialist for regular inspections of AZ-301. The WRPS disposition committed to this and the action was incorporated in the *DST Integrity Program Plan.* Many of the waste compatibility assessments reviewed for the 2016 DSTAR listed in Table U-1 are specifically for AZ-301 condensate transfers. Yet AZ-301 is specifically excluded from the scope of the 2016 DSTAR without explanation. The drain lines (DR-AY1, DR-AZ2) associated with AZ-301 also were previously determined to be FFU but are similarly excluded from the 2016 DSTAR. Tank AZ-301 and its associated ancillary equipment need to be included in the 2016 DSTAR.

No.	Section / Page	2016 DSTAR Statement	Comment
7	2.3 / p 9	2016 DSTAR Exclusions: • Tank AY-102 is leaking from the primary containment and, as such, the tank is designated as not fit for use. • Pits at tank AY-102.	Only the AY-102 tank itself is unfit for use. It is not correct to exclude the pits or other ancillary equipment. Many components were upgraded to support waste retrieval from AY-102, and IQRPE assessments were performed of the upgrades. Some components support other uses. For example, routine waste transfers and line flushes to/from the adjacent DST AY-101 pass through the AY-02A central pump pit; several such transfers are forecasted (WRPS-59691-S, *241-AY-02A Design Specifics AY-102 Draining Jumper*). A line to AY-102 is also used to drain the jumper in the AY-02A pit after these transfers; draining this jumper is required by the *Tank Farms Documented Safety Analysis*, RPP-13033. The 2016 DSTAR needs to include the pits and other ancillary equipment at AY-102. References should be provided to any IQRPE assessments of the upgraded components along with the results, recognizing that some (but not all) of these occurred after the cutoff date for the 2016 DSTAR. [40 CFR 265.191(a)] [WAC 173-303-640(2)(a)]
8	5.4.2 / p 58	Although deferred use lines are not part of the scope of this report, this section is included to demonstrate that a process is in place to activate a deferred use line if the need arises. Once the deferred use line is activated, it would be added to drawing H-14-107346, *Waste Transfer Piping Diagram* (sheets 1 to 8), which is often referred to as the 'fit for use line list / interface diagram' or 'routing board'. Deferred use lines are RCRA-compliant lines that have not been pressure-tested after construction was completed. These lines have not been certified by an IQRPE and do not have a fit for use designation. In order for these lines to be placed into service, the following process is used: • A pneumatic pressure test is performed and witnessed by an IQRPE or Qualified Inspectors. • An IQRPE report for the testing is produced and, if the line passes the pressure test, an integrity assessment is	The terms **Deferred Use** and **Emergency Use Only** for non-compliant tank systems and ancillary equipment have no regulatory basis. Ecology no longer recognizes those terms. Citing those categories as the basis for not including some types of tank system components in the periodic integrity assessments is not acceptable. USDOE must operate and maintain the DST System to minimize the possibility of any unplanned release of hazardous waste which could threaten human health or the environment. Monitoring must be conducted for deterioration of tank system components. The purpose of the integrity assessment is to determine that the tank system is not leaking and is fit for use. Whether a component is fully compliant with RCRA does not exempt it from the periodic integrity assessment. Allowing a portion of the tank system to possibly deteriorate without (for example) ensuring that adequate corrosion protection is being maintained cannot be allowed. It is not sufficient to say that an IQRPE will later assess a component when a need for its use arises. There is no assurance the component will perform as needed, and the approach skirts the purpose of periodic integrity assessments.

No.	Section / Page	2016 DSTAR Statement	Comment
		completed and a fit for use letter is produced by the IQRPE. • The routing board (H-14-107346) is updated to include the line 'Fit for Use.'	Based on comments received during the Draft Rev 9 comment period, the terms **Deferred Use** and **Emergency Use Only** for non-compliant tank systems and ancillary equipment have no regulatory basis. Ecology no longer recognizes those terms. [40 CFR 265.15] [40 CFR 265.31] [40 CFR 265.191]
9	Table D-1	(None of the lines to/from AW-103 are FFU.)	None of the waste transfer lines to/from AW-103 are Fit For Use. The regulations require that a tank system which is unfit for use must be removed from service immediately, further addition of wastes must be prevented, and waste in the tank system must be removed. [40 CFR 265.196]
10	Table D-1 / p D-8	(Line SL-168 is not FFU.)	The slurry line SL-168 from the 242-A Evaporator to the AW-A Valve Pit is **not Fit For Use** per Table D-1. However, this line is permitted in the 242-A Evaporator portion of the Hanford DW Permit, Rev 8C (see Section 4.1.7.3.2). This line is actually the responsibility of the DST System, not the 242-A Evaporator. (See the DST boundary definition in Section 2.1.1 of the certified Part B Permit Application for the DST System, and response USDOE response 00-OSD-174 to the *Administrative Orders No. 00NWPKW-1250 and No. 00NWPKW-1251*). Status of the line needs to be clarified. A permit modification is also needed to correct the 242-A Evaporator portion of the DW permit.
11	3.3.3 / p 17 5.7.3 / p 69 5.1.1 / p 48	2016 DSTAR R16-19: Pressure testing of the encasements of the DST WTS piping should continue on a 10- year schedule, except pipeline SL-167 should be on a 5 year schedule. There is an identified low spot in transfer line SL-167 at cleanout box AW-COB-6. This line has shown signs of corrosion product on the exterior of the 2 in. primary pipe due to standing uninhibited water. Although line SL-167 has been declared fit for use (7G110-05-003), there is still a potential for continued corrosion.	Numerous references are made throughout the 2016 DSTAR of the **issues** associated with the line **SL-167**. This is the **primary line for returning slurry from the 242-A Evaporator to the DSTs** via the AW-B Valve Pit. The **backup is SL-168**; see the previous comment that **SL-168 is unfit-for-use**. Given that operation of the 242-A Evaporator is wholly dependent on a single pipeline of suspect integrity, simply pressure testing that line every 5 years is not enough. Continued availability of the 242-A Evaporator is essential for managing the tank wastes and completing the cleanup mission. A more proactive approach needs to be identified. The line SL-167 should

No.	Section / Page	2016 DSTAR Statement	Comment
	Table 5-1 / p 50	Low point identified on transfer line SL-167. Line SL-167 subjected to pressure transients during in-service leak test.	be pressure each time prior to use. Priority needs to be given to replacing both the primary slurry line SL-167 and the backup line SL-168.
	5.2.1.6 / p 51	Improper Fit-Up on Jumper AWVPB-WT-J-(R1-R3-C): During jumper removal attempts to support the transfer line SL-167 hydrostatic pressure test, it was noted that jumper AWVPB-WT-J-(R1-R3-C) required significant effort to remove. A laser scan of the jumper was performed. It was determined that the nozzle as-built dimensions and the current dimensions of the jumper did not match and created fit-up issues. The jumper was evaluated for potential stresses it would be subjected to while installed and it was determined that the jumper would exceed code allowable stress by a significant margin and therefore required replacement.	
	5.2.3.1 / p 53	Standing Liquid Transfer Line SL-167 Encasement …Multiple tests and visual inspections, including video inspections, were performed and confirmed that the water was removed and the environment in the encasement had significantly improved. The primary line was hydrostatically tested to 1.5 times the design pressure. The encasement was also pneumatically tested. The testing confirmed the integrity of line SL-167. Transfer line SL-167 in the AW Tank Farm was subsequently replaced on the active line list and declared fit for service.	
	5.6 / p 66	2006 DSTAR Item R43: This document in conjunction … finds that the following actions are necessary to reduce the possibility of continued corrosion in AW tank farm slurry line SL-167… • 2016 DSTAR Assessment: The response to this recommendation indicates there is no simple way of	

No.	Section / Page	2016 DSTAR Statement	Comment
		introducing inhibited water to the system. At the completion of each campaign, the 242-A Evaporator vessel is deep flushed to remove residual supernate. A portion of the deep flush is drained through line SL-167. Further, if raw water is used in the line instead of residual supernate, the line must be used for a waste transfer or flushed with inhibited water or a portion of the deep flush from the 242-A Evaporator within 12 months after the line's last usage as described in TFC-ENG-STD-26.	
	11.5.2 / p 161	Line SL-167 This primary line is 2 in. Schedule 40 carbon steel encased in a 4 in. Schedule 40 carbon steel line. Residual water was found in the annulus in 2005 after tests performed earlier in 2005. In 2012 the annulus was dried, examined visually and with UT, and tested for Fitness-for-Service (RPP-RPT-55204). Corrosion was determined to be minimal and the line fit for use. The line has been moved to a 5-year test schedule rather than the standard 10-year period.	
12	G.2 / p G-5	Several instances of duplicate pipe numbers exist within the DST WTS. As an example, there is a line numbered SL-167 in the AN Tank Farm and another line numbered SL-167 in the AW Tank Farm. These are completely separate lines and are in no way related to each other. The line in the AN Tank Farm is listed as not approved for use while the AW Tank Farm line is fit for service. The line numbers are unique if the entire line number is used. However, it is the practice to use shortened line numbers. To avoid confusion when using shortened line numbers, a reference to the tank farm where the line is located should be used along with the line number.	A plan for determining the extent of the line discrepancies and making corrections needs to be developed. The Observations noted by the IQRPE in Section G.2 have no follow-on Recommendation. They were also not addressed by WRPS in the follow-on report *2016 Double-Shell Tank Integrity Assessment Recommendation Dispositions*, RPP-RPT-59218. Of particular concern, the discrepancies carry over to (as quoted from the 2016 DSTAR) "the H-14-107346, *Waste Transfer Piping Diagram* (sheets 1 to 8), which is often referred to as the 'fit for use line list/interface diagram' or 'routing board'." The particular example cited by the IQRPE appears on drawings H-14-107346, Sheets 3 and 6. Errors in the routing board may cause misrouting of waste transfers and use of unpermitted lines.

No.	Section / Page	2016 DSTAR Statement	Comment
13	11.4 / p 158	In 2015 the tank AP-102 floor was inspected and several areas of thinning were noted, the most serious being measured as 0.156 in. or about a **70% loss** from the nominal 0.500 in. thickness. No areas of reportable thinning were discovered above the thinned floor regions on the secondary liner sidewall. No through-wall penetration of the secondary liner was discovered. Based on a review of construction drawings, these areas of thinning are noted to be located approximately above the concrete foundation drain slot locations. Continued visual examination is planned with a UT rescan in 5 years.	Based on the information provided in the report, tank AP-102 is unfit for use as it has no creditable secondary containment. AP-102 is no longer capable of storing waste without posing a threat of release of dangerous waste to the environment; see the definition of "unfit-for-use tank system" in WAC 173-303-040. USDOE needs to provide a more detailed explanation on how this tank still meets requirements for secondary containment, or move forward to prevent any further waste additions to AP-102. The minimum thickness of the secondary tank bottom was actually measured to be 0.149 inches as reported in RPP-RPT-58276, *Ultrasonic Inspection Results for Double-Shell Tank 241-AP-102 – FY 2015*. The measurement error may cause the thickness measurement to be under/over estimated by +/- 0.014 inch. This represents greater than 70% reduction in the thickness of the secondary tank bottom. The cause is external corrosion on the underside of the secondary tank bottom. Only two small areas of the secondary tank bottom were inspected, altogether representing less than 20% of the visible portion of the annulus. The remaining portion of the secondary tank bottom resides under the primary tank and is inaccessible. The secondary tank bottom was not inspected in a previous examination, so there are no earlier results for comparison. The 2016 DSTAR demonstrates a lack of understanding of the seriousness of this condition. No Findings, Observations, or Recommendations specific to AP-102 are noted in Sections 3.3.3, 11.7.1, 11.7.2, or 11.7.3. Checking only the same site in AP-102 in 5-10 years ignores the possibility that more extensive corrosion may exist elsewhere and is yet to be detected. "Checking in 5-10 years" is not the same thing as rescan the area in 5 years. Further, stating that defects in the secondary tank can be repaired is inconsistent with the physical reality of the situation. There is nothing to show that the secondary tank is leak tight and thus AP-102 cannot be fit for use. [40 CFR 265.191] [WAC 173-303-640(2)(a)] [WAC 173-303-040]
	11.7 / p 165	None of the tank farms have significant concerns: • Tank AP-102 may have external corrosion on the secondary tank. **At this time there is no significant concern and could be patched if it does.**	
	11.7 / p 165	The discovery of 70% through-floor corrosion in the tank AP-102 secondary has many aspects...The best approach is to check this site again in 5 to 10 years and see if the corrosion is continuing; alternatively, a core sample could be taken to see if corrosion has actually occurred.	
	11.7.4 / p 167	In regards to the DST corrosion assessment, the DST System is fit for use as listed in Appendix D.	
	4.3.1.1 / p 36	A complete list of tanks inspected using UT is in Table 1 of RPP-RPT-58301, *Double-Shell Tank Ultrasonic Testing Summary*. That report also contains comprehensive summaries of all UT inspections. [Excerpt from RPP-RPT-58301, Section 4.1.6:	

No.	Section / Page	2016 DSTAR Statement	Comment
		As a result of these discoveries, WRPS Engineering and members of the HIAP recommended that an enhanced visual inspection of the annulus space be performed for **Tank AP-102, and that the annulus floor be rescanned in five years to trend the condition**. Planned annulus floor UT will also be continued for other DSTs, with the criteria that a minimum of 16 ft of annulus floor space be scanned to inspect a region covering three concrete foundation drain slot locations. Continued scanning of the secondary liner bottom on the annulus floor is being incorporated into work planning for UT activities for upcoming tanks.]	
14	3.3.3 / p 15	2016 DSTAR R16-5: UT measurements of the primary DST and the secondary liner lower knuckle should be conducted at least every 8 to 10 years.	The secondary tanks are constructed of thinner material and were not stress relieved like the primary tanks. The HIAP identified in 2014 the concern with corrosion on the underside of the secondary tank bottoms in areas of the drain slots. There are no recommendations whatsoever in the 2016 DSTAR that mention the annulus floors or the secondary tank bottoms. The 2016 DSTAR recommendations need to address further UT examination of the secondary tank bottoms.
15	8.2.1.6 / p 100	The AP Tank Farm contains eight DSTs. The eight DSTs each have a level detector and three annulus leak detectors. All of these are Enrafs. The CAMs that monitor the individual annulus exhaust ventilation ducts for radiation normally are not in operation. They can be made temporarily operational for special activities such as when a tank is qualified at a higher level than the previous maximum capacity. The AP Tank Farm level and leak detection instruments are numbered as shown in Table 8-6.	The SY Settlement Agreement states that "All DSTs equipped with operating annulus CAMs will be monitored daily for airborne releases into the annulus that could give an indication of a leak from the primary tank structure into the annulus." Not operating the CAMs violates the SY Settlement Agreement. The CAMs are also not listed in the 2016 DSTAR Table 8-6, "AP Tank Farm Level and Leak Detection Instruments." [SY Settlement Agreement, PCHB Nos. 98-249, 98-250, *Settlement Agreement and Stipulated Order of Dismissal*, Part II, Section I]
16	3.3.3 / p 15	2016 DSTAR R16-8: Visual inspections of the DST annuli should be conducted at least every 8 to 10 years preceding UT and can help direct where UT measurements are taken.	The plan for conducting visual inspections has changed significantly since AY-102 leaked. The schedule for limited visual inspections previously was every 5-7 years. Now an 'enhanced' visual inspection is performed every 3

No.	Section / Page	2016 DSTAR Statement	Comment
	10.3 / p 130	3. Each DST annulus shall be video inspected on a 5-year frequency not to exceed 7 years (calendar years).	years. The current visual inspection plan is described correctly in Section 11.3.1 but not elsewhere. The description should be adjusted as needed.
	11.3.1 / p 147	'Normal' visual inspections that examine about 50% of the annulus area on a 5- to 7-year interval have been replaced by 'enhanced' inspections that cover over 95% of the annulus area at a 3-year interval.	RPP-PLAN-46847 was updated in April 2015 to Rev 2. While the document now discusses the leak from AY-102, it also describes the "old" plan for conducting visual inspections of the DSTs. RPP-PLAN-46847 needs to be updated too.
	Table H-1 / p H-10	2006 DSTAR R16 (WRPS Disposition): The methodology of comparing current inspections with results from past inspections is described in RPP-PLAN-46847, Rev. 0, *Visual Inspection Plan for Single-Shell Tanks and Double-Shell Tanks*. Section 3.2, "Double-Shell Tank Visual Inspections," states that the present approach for conducting visual examinations of DSTs is to perform a video examination of each tank's interior and annulus regions in conjunction with the tank's ultrasonic examination inspection, or approximately every 5 years (not to exceed 7 years between inspections), whichever occurs first.	
17	2.3 / p 9	The following tanks and ancillary equipment are excluded from this 2016 DSTAR: • Electrical and instrumentation circuitry, except for: – **The leak detection devices for the tanks are included**; leak detection pits for the secondary liner are excluded.	Section 8 of the 2016 DSTAR provides a physical description of the leak detection system for the tanks (only). What is provided is simply a system description. The Observation finally notes the databases used to track the repair history and performance issues of the instruments. What is not evident is that any of the available performance information for the tank leak detection system was reviewed by the IQRPE. There are known issues with the ENRAFs being out of service for extended periods of time and not being reported. Many of the CAMs were either removed or are inoperable, even though they are required by the SY Settlement Agreement.
	8.0 / p 94	LEAK DETECTION SYSTEMS The purpose of this assessment is to determine that DSTs are not leaking and are fit for use. Additionally, this assessment is to determine that the leak detection system is in place, maintained, and operated adequately to ensure the ability to detect a leak. The leak detection systems are used to determine if the primary shell is leaking or if the tank liquid	Leak detection for the waste transfer systems was not addressed in the 2016 DSTAR. Leak detection systems are installed in the encasement of waste transfer lines or in waste transfer-associated structures (e.g., pump pits, valve pits, diversion boxes, Diversion Box 6241-A, Vent Station 6241-V, siphon standpipe stations, 241-SY101-PPP prefabricated pump pit,

No.	Section / Page	2016 DSTAR Statement	Comment
		level changes rapidly. This section addresses the primary tank liquid level and the tank annulus between the primary and secondary shells for leak detection. This section is to evaluate the tank leak detection systems fit for purpose, inspections, maintenance and compliance with regulations.	aboveground manifold boxes) into which the encasements drain. The RCSTS includes leak detection along the length of the route. These structures are all ancillary equipment and many of them were evaluated and determined to be Fit For Use (Table D-1), but their leak detection systems were not evaluated.
	8.6.2 / p 102	Observations Each DST has a level detector and three annulus leak detectors meeting the requirements of WAC-173-303-610(2)(a). The logs show any issue with a level/leak detector and any out-of-limit reading, as well as an instrument malfunction. The repair history of any individual instrument is maintained in the CHAMPS and Enterprise Asset Manager (EAM) database. Performance issues of the leak detection system are addressed in the Corrective Action database, and compliance with regulatory requirements are identified in the Environmental Notification database.	
	3.3.3 / p 18	2016 DSTAR R16-24: A common leak detection instrument database or a program that extracts data from the multiple databases should be developed to identify issues relating to a particular instrument or location that has repeating issues. (For additional information, see Section 8.)	
18	2.3 / p 9	The following tanks and ancillary equipment are excluded from this 2016 DSTAR: • Electrical and instrumentation circuitry, except for: – The leak detection devices for the tanks are included; **leak detection pits for the secondary liner are excluded.**	The purpose of the leak detection pits is to detect failure of the secondary containment. While Ecology does not recognize tertiary leak detection under the regulations, they are ancillary equipment, designed to contain waste, and required to be included in the 2016 DSTAR. See the regulatory citation from 40 CFR 265.193(c)(3) below. [Regarding the latter portion of the citation…The ENRAFs in the annulus have been shown to be unable to detect a leak within 24 hours. Other technology is available which can detect a leak (i.e., CAMs in the annulus ventilation) but is not being employed.]
	Table H-1 / p H-7	2006 DSTAR R12: The short design life for the secondary tanks, coupled with the current age of the tanks suggests it is vitally important to ensure operability of the tertiary leak	

No.	Section / Page	2016 DSTAR Statement	Comment
		detection pits. The TFC needs to maintain tertiary leak detection capability throughout the life of the tanks. (WRPS Disposition) The tertiary leak detection pits are no longer listed as a Leak Detection Monitoring and Mitigation (LDMM) feature because **they are not recognized by the Washington State Department of Ecology as necessary features.**	The 2006 IQRPE recommendation noted the LDPs are vital for monitoring the leak integrity of the secondary tank, which is clearly included in the scope of the integrity assessment. The regulations further state the "operator must determine that the tank system is not leaking..." However, the 2006 IQRPE recommendation was essentially ignored. The WRPS disposition talks about how the LDPs operate and provides reasons for maintaining their capability, but says nothing about how (or if) the LDPs are being maintained. The 2016 DSTAR then excluded the LDPs altogether from the scope; the 2016 IQRPE avoided discussion of all this in Section 4.5 where the disposition of the previous IQRPE's recommendations is reviewed.
	4.5 / p 40	DISCUSSION OF RESOLUTIONS OF THE 2006 DSTAR RECOMMENDATIONS (The WRPS disposition to Recommendation R12 was not reviewed by the IQRPE.)	Please also provide the basis for the statement that the LDPs are not recognized by Ecology as being necessary. 40 CFR 265.193 **Containment and detection of releases.** (c) To meet the requirements of paragraph (b) of this section, secondary containment systems must be at a minimum: (3) Provided with a leak detection system that is designed and operated so that it will **detect the failure of either the primary and secondary containment structure** or any release of hazardous waste or accumulated liquid in the secondary containment system within 24 hours, or at the earliest practicable time if the existing detection technology or site conditions will not allow detection of a release within 24 hours; [40 CFR 265.191] [WAC 173-303-640(2)(a)]
19	5.6 / p 67	2006 DSTAR Item R45: A formal integrity assessment should be performed on all DST System waste transfer, drain, and process waste lines eight years after the issuance of this integrity assessment. • 2016 DSTAR Assessment: This recommendation is inconsistent with other portions of the DSTAR. Pneumatic pressure testing of the 75 active transfer	Both the IQRPEs in 2006 and 2016 recommended that leak testing of the waste transfer lines be conducted every 10 years. The facility agreed on paper to implement the recommendation. However, performance of leak testing in the field has not been adequate. Results of transfer line encasement pressure testing are provided in the 2016 DSTAR in Table 5-4. Spot checking the results for **just the AN tank farm**, six transfer lines (SL-161, SL-168, SN-261, SN-266, SN-268, SN-

No.	Section / Page	2016 DSTAR Statement	Comment
		pipeline encasement has been implemented on a 10-year interval. This disposition satisfies the recommendations outlined in Item R45.	636) which are identified in Table D-1 as being Fit For Use were not pressure tested in the last 10 years. Altogether, Table 5-4 provides results for only 31 lines, of which 29 lines passed. Several places in the 2016 DSTAR is the statement "The scope of the DST System includes 27 DSTs and ancillary systems including 77 pipelines, 38 pits, and other ancillary systems." Given that several of these "77 pipelines" are drain lines, many transfer lines are still unaccounted for in terms of having been pressure tested. Yet all "77 pipelines" are designated as Fit For Use in Table D-1. The IQRPE did not note in the 2016 DSTAR the discrepancy between the recommended level of testing and what was actually performed. No mention is made of whether all the transfer lines were tested, some but not all, what should be done about those overdue for testing, etc.
	Table H-1 / p H-28	2006 DSTAR R45 (WRPS disposition): …the IQRPE recommended interval of 10 years has been adopted for pneumatic pressure testing of the 75 active transfer pipeline encasements.	
	3.3.3 / p 17 5.7.3 / p 69	2016 DSTAR R16-19: Pressure testing of the encasements of the DST WTS piping should continue on a 10- year schedule, except pipeline SL-167 should be on a 5 year schedule.	
	5.4.1 / p 58	Operating Specifications Operating specifications cover WTS integrity testing and verification requirements including pressure testing of transfer lines, automated leak detection, and life cycle management controls for HIHTLs. OSD-T-151-00010, *Operation Specifications for Pressure Testing and Leak Detection for Tank Farm Transfer Systems & for Control and Use of Temporary Transfer Lines,* requires transfer lines be pressure tested to 150% of maximum operating pressure for 1 hour. The lines must show less than a 5% pressure drop during the test to meet the acceptance criteria. Construction specifications for RCRA-compliant lines require pressure testing in accordance with ANSI/ASME B31 series piping codes following installation and prior to service. **Periodic testing of these lines may be performed based on engineering judgment of factors such as date of the last transfer and age of the line, but additional pressure testing requirements are not specified by OSD-T-151-00010.**	The IQRPEs recommendation for pressure testing the transfer lines every 10 years was never adopted in the facility operating specification. The testing frequency is left open. The facility has since attempted to move even further away from the recommended testing frequency. The draft *2016 Double-Shell Tank Integrity Assessment Recommendation Dispositions*, RPP-RPT-59218, attempts to qualify the IQRPE recommendation by stating checks will be performed "…every 10 years **or prior to use**." The regulations clearly state the schedule for integrity assessment must be based on the results of past integrity assessments. [WAC 173-303-640(2)(e)]

No.	Section / Page	2016 DSTAR Statement	Comment
20	Table H-1 / p H-28	2006 DSTAR R45 (WRPS disposition): Drain lines cannot be assessed by traditional means of pneumatic pressure testing because they are open at each end (i.e., at the pump pits and where they drain waste back into the tanks). There is no need to pressure test drain lines because they are never pressurized during operations. Therefore, **integrity assessments of the drain lines are not performed**.	While drain lines cannot be pressure tested, there are other means of inspecting these lines which satisfy the regulatory requirements. The lines may not drain completely and have corroded through completely. Instances are reported in the 2016 DSTAR of waste transfer lines not draining due to the field configuration. Without any leak detection system whatsoever for the drain lines, leaks could occur and be undetected. Several drain lines are shown as Fit For Use in Table D-1 without having been leak tested and no plans for doing so. The drain lines are **ancillary equipment** and a plan is needed to verify their integrity. The 2016 DSTAR in Section 5.1.2 talks about alternatives to pressure testing that were previously researched and evaluated. [40 CFR 260.10, 40 CFR 265.191] [WAC 173-303-640(2)(a), WAC 173-303-040]
21	5.5 / p 59	HIHTLs are considered part of the SST WTS and are not considered in this report.	Use of HIHTLs is not restricted to SSTs. HIHTLs were used in the SY tank farm, and are currently being used for removing waste from the leaking AY-102. See the DST Waste Transfer Piping Diagram H-14-107346 Sheet 5.
22	2.1 / p 7 6.1.3 / p 72	The DST System includes 27 DSTs, 77 pipelines, 38 pits, and other ancillary systems. There are a total of 246 post-2005 pipelines evaluated, as defined by the 2006 DSTAR Volume 2 and Attachment 3 of RPP-20960.	The distinction between the 246 pipelines evaluated for cathodic protection, and the 77 pipelines said to be in the scope of the 2016 DSTAR, is unclear. Further explanation is needed.
23	10.2.2.2 / p 123	The outside surface of the secondary containment is in contact with the concrete encasement. The alkaline environment of concrete (pH of 12 to 13) provides steel with corrosion protection through the formation of a thin oxide layer on the steel that prevents metal atoms from dissolving.	This section looks at degradation of the various DST system components due to corrosion. The section on corrosion of the outside surface of the secondary containment needs to be revised to address corrosion of the outside surface of the secondary containment adjacent to the drain slots. This should include discussion of the corrosion mechanism, available monitoring methods, inspection results, and recommendations.
24	10.3.2 / p 132	The results of the evaluation showed five tanks that were of potential concern at the time or within the next 5 years, not	Several DSTs are identified in the 2016 DSTAR in which the tank chemistry is out of spec and a source of corrosion. The corrosion control program described in Section 10.3 outlines the approach to detecting and

No.	Section / Page	2016 DSTAR Statement	Comment
		including tank AY-102. (The concerns with AN-101, AN-106, AN-107, AY-101, and AZ-102 are then described.)	controlling tank chemistry issues like this. Corrective actions are also planned. The 2016 DSTAR needs to include a recommendation for tracking the resolution of the issues associated with these particular tanks.
25	10.4 / p 138	2006 DSTAR Item R11: Emergency pumping procedures currently estimate that the pumping of a secondary tank will begin on the tenth day from discovery of the leak. According to stated functional requirements for the secondary tanks, pumping needs to be completed on the seventh day. It was further recommended that the Tank Farm Contractor perform one of three actions. • 2016 DSTAR Assessment: As detailed in Section 10.2.2.2, the secondary liner can contain the waste for a reasonable period of time, well in excess of that necessary to empty the annulus in the event of an emergency.	As was demonstrated in response to the leaking AY-102, **emergency pumping plans are inadequate** and need to be revised. Further, the secondary tank cannot realistically be emptied due to physical limitations of the equipment and the nature of the leaked waste. Corrosion of the secondary tank from the leaked waste will continue and needs further evaluation. The 2016 DSTAR needs to identify this as a significant uncertainty, and include a recommendation for developing a path forward.
26	11.3.1 / p 147	(Visual inspection results for AY, AZ, SY, AW, AN, and AP Tank Farms)	Results of the visual inspections are described in this section. However, the results lack detail, some individual DSTs are not mentioned, it is not always clear which tanks had limited versus enhanced visual inspections, or what the plan is for inspecting the remaining tanks if only a portion of the tanks in a farm were inspected in the time period. For example, two AN tanks received enhanced visual inspections in 2014, but no mention is made of the remaining tanks. The 2016 DSTAR needs to better address visual inspections in general. Something similar to what was done for pit inspections in Section 7.4 of the 2016 DSTAR would be expected.
27	Executive Summary	Integrity assessments are required to determine that the existing Hanford Double-Shell Tank (DST) System is sound and fit for use.	Integrity assessments are to determine if the tank(s) are capable of performing their design function, which is the containment of hazardous materials. Specifically, the regulations state that "…the owner or operator must determine that the tank system is not leaking…" This report does not address the system's ability to contain hazardous materials. DSTAR 2006 addressed both structural and leak integrity. [40 CFR 265.191]

No.	Section / Page	2016 DSTAR Statement	Comment
28	Executive Summary	The purpose of this integrity assessment report is to determine if the DST System is fit for use such that the tanks and ancillary systems are not leaking, are adequately designed, and are structurally adequate and compatible with the waste to ensure that the tank or ancillary system will not collapse, rupture, or fail and to certify the DST System as fit for use.	See the previous comment on the need to demonstrate the tank system is not leaking. The 2016 DSTAR does not address the requirements from 40 CFR 265, Subpart J on containment. [40 CFR 265.191]
29	2.3 / p 9	Air handling systems used to ventilate the DSTs and ancillary structures, such as tank AZ-301.	Please explain what standard was applied to ancillary structures to determine an assessment was not required.
30	4.2.6 / p 30-31	**Secondary Tank Walls** The secondary tank walls provide secondary DST containment. These tank walls also provide the interior form for the concrete shell surrounding the tank. In the completed state, the bottom knuckle is the only portion of the secondary tank wall that is not supported by concrete. Therefore, the only area that needs to be considered for the structural adequacy of the DSTs after the concrete has cured is the bottom knuckle. … For AP Tank Farm tanks with 460 in. of waste, the maximum specific gravity of the waste in the secondary containment tank is 1.83 (2006 DSTAR Volume 1). Apparent thinning of the secondary containment floor reported in RPP-RPT-58276, *Ultrasonic Inspection Results for Double-Shell Tank 241-AP-102 – FY 2015,* does not pose a structural adequacy concern because these areas are supported by the concrete foundation.	This does not address the requirement of § 265.193(b) Secondary containment systems must be: (1) Designed, installed, and operated to prevent any migration of wastes or accumulated liquid out of the system to the soil, ground water, or surface water at any time during the use of the tank system; and (2) Capable of detecting and **collecting releases and accumulated liquids until the collected material is removed.** This section requires the secondary containment be able to contain liquids. Structural integrity is evaluated but containment capability has not been addressed. The definition of a "tank" at WAC 173-303-040 includes "…a device…to contain an accumulation of dangerous waste."
	11.4 / p 158	In 2015 the tank AP-102 floor was inspected and several areas of thinning were noted, the most serious being measured as 0.156 in. or about a 70% loss from the nominal 0.500 in. thickness. No areas of reportable thinning were discovered above the thinned floor regions on the secondary	

No.	Section / Page	2016 DSTAR Statement	Comment
		liner sidewall. No through-wall penetration of the secondary liner was discovered. Based on a review of construction drawings, these areas of thinning are noted to be located approximately above the concrete foundation drain slot locations. Continued visual examination is planned with a UT rescan in 5 years.	
31	11.7 / p 165	The definition of thinning is a structural concern.	That does not address the potential impact on the ability of a tank to perform its function of containment as required by 40 CFR § 265, Subpart J.
32	11.7 / p 165	The discovery of 70% through-floor corrosion in the tank AP-102 secondary has many aspects. Inasmuch as the drain pits have not been reported as being flooded, it is difficult to determine the source of water to effect corrosion. Hanford is an arid site with a water table roughly 200 ft. below ground level or about 150 ft. below the bottom of the tank. Carbon steel could corrode to the extent noted in 28 years in Hanford Site soil; unfortunately, the steel was not in contact with soil so the mechanism is uncertain. It is possible, though not likely, for conditions present during construction to have affected the corrosion during and shortly after construction. The best approach is to check this site again in 5 to 10 years and see if the corrosion is continuing; alternatively, a core sample could be taken to see if corrosion has actually occurred.	The report doesn't address if the 70% corrosion affects its ability to contain waste that could leak into the annulus. In other words, there is no conclusion as to whether the secondary containment can perform as design and the tank is therefore fit for use. Using the corrosion rate evaluated in RPP-RPT-57774, Rev 1 for external corrosion of the secondary liner, the leak integrity of the liner floor may be gone within 15 yrs. Please provide a justification for UT inspection on only a 10 yr schedule and not mandating a 5 yr or less schedule.
33	5.2.2.2 / p 52	Transfer Lines SN-264 and SN-274 Full of Liquid During jumper installation efforts in valve pit AW-B, liquid was discovered in a jumper connected to transfer line SN-264. After a review of the system and associated waste transfer history, it was determined the existing system could not be drained based on field configuration. Both of these lines were dedicated to supporting waste transfers from the 204-AR Facility. The last transfer of waste to the DST System was in 2005. Both lines run from a high point at	This section discusses abnormal issues associated with the waste transfer system since the 2006 DSTAR. An issue was identified for the lines SN-264 and SN-274 in that the lines do not drain and were found to be full of liquid. These lines were used to support waste transfers from the 204-AR Waste Unloading Station to the AW-04A Pump Pit. The previous 2006 DSTAR indicated SN-264 and SN-274 were not available for use. The current 2016 DSTAR shows the lines as FFU in Table D-1, but doesn't say whether the draining issue was resolved or how. If the issue still exists, there needs to be a follow-on recommendation for regular inspection and

No.	Section / Page	2016 DSTAR Statement	Comment
		AW-B to pump pit AW-04A (low point of the lines). There is no near term use for these lines. However, both lines were deferred use components and are not certified to contain liquid. Engineering recommended that the flexible metal jumper connected to nozzles A and L in pit AW-04A be removed and disposed of so the lines can be adequately drained.	actions to prevent further degradation (such as maintaining corrosion protection and flushing with inhibited water after each use). The AW-04A Pump Pit itself is non-compliant and is also deficient on its coating inspection (see earlier comment). No mention is made of the TK-1 Catch Tank in the 204-AR Waste Unloading Station or the transfer line LIQW-702. The tank presently contains 800+ gallons of wastewater containing dangerous waste. This tank was identified in the 2006 DSTAR as having no future use. In 10+ years no progress has been made in deciding its path forward, and in the meantime has not received any integrity assessment whatsoever.